

X. *On a Collection of Fishes from the Rio Jurua, Brazil.*By G. A. BOULENGER, *F.R.S., F.Z.S.*

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[PLATES XXXIX.—XLII.]

THE Collection dealt with in this paper, and acquired by the Trustees of the British Museum, was made, in July 1897, by Dr. J. Bach, of La Plata, in the Rio Jurua, an affluent of the Amazons, the Fish-fauna of which had not been previously explored. The list here given will fill up an important gap in our knowledge of the distribution of South-American Fishes. As many as nine new species were discovered by Dr. Bach in the comparatively short time he was able to devote to this exploration. No doubt a more extensive collection in the same river, which I believe it is his intention to make in the near future, if circumstances permit, would result in very numerous additions to this list, which evidently contains but a small proportion of the representatives of this important class of Vertebrates in the Rio Jurua.

SCIÆNIDÆ.

1. SCIÆNA AMAZONICA Cast.

PLEURONECTIDÆ.

2. SOLEA FISCHERI Sldr.
3. SOLEOTALPA UNICOLOR Gthr.

SILURIDÆ.

4. SORUBIM LIMA Bl. Schn.
5. PLATYSTOMA JURUENSE, sp. n. (Plate XXXIX.)

Upper jaw projecting very slightly beyond the lower. Bands of small, equal, villiform teeth in jaws and palate; vomerine band as broad as præmaxillary, single, notched in the middle, very narrowly separated from the much narrower palatine bands. Depth of body $5\frac{2}{3}$ times in total length, length of head $3\frac{1}{2}$ times. Head $1\frac{2}{3}$ as long as broad, its greatest width $1\frac{2}{3}$ width of mouth; fontanelle very small; eye

extremely small, its diameter 4 times in interorbital width, a little nearer opercular border than end of snout; occipital process narrow, not reaching basal bone of dorsal spine; maxillary barbel extending nearly to extremity of ventral; inner mandibular barbel extending to middle of pectoral, outer to middle of ventral. Branchiostegal rays 11. Dorsal I 6, originating at equal distance from the end of the snout and the middle of the adipose fin; spine rather feeble, not serrated, $\frac{3}{4}$ length of head. Adipose fin as long as base of dorsal or anal. Pectoral not reaching ventral; spine feebly serrated, $\frac{2}{5}$ length of head. Anal 14. Caudal deeply forked, both lobes produced into long filaments. Yellowish brown, with 9 equidistant dark brown cross-bands; head dark brown above.

Total length 190 millim.

A single specimen.

6. *PIMELODUS MACULATUS* Lacép.

7. *PIMELODUS MODESTUS* Gthr.

8. *CENTROMOCHILUS HECKELII* Filippi.

9. *CETOPSIS CANDIRU* Ag.

10. *OXYDORAS STENOPELTIS* Kner.

11. *OXYDORAS TRIMACULATUS*, sp. n. (Plate XL. fig. 1.)

No teeth in the upper jaw. Depth of body $4\frac{1}{2}$ times in total length, length of head $3\frac{2}{3}$ times. Snout compressed, pointed, covered with skin; posterior nostril close to the eye; diameter of eye nearly equal to length of snout, 3 times in length of head, $1\frac{1}{2}$ interorbital width; cheeks and opercles covered with skin; skull striated above, granulate on the sides; fontanelle not produced as a groove posteriorly; bases of the six barbels united by the fold of the lower jaw; maxillary barbels branched, extending to base of pectoral spine; mandibular barbels short. Gill-cleft extending to below posterior border of eye. Humeral process striated, broader than and half as long as pectoral spine, obliquely truncated posteriorly. Pectoral spine as long as or slightly longer than dorsal, $1\frac{1}{4}$ length of head, extending to middle of ventral, very strongly serrated, especially on the inner side. Dorsal I 5; spine feebly serrated in front, strongly behind, equally distant from the end of the snout and the adipose fin. Adipose fin half as long as base of anal. Anal 13. No shields between the dorsal fins or on the belly. Lateral shields 31-32, nearly half as deep as the body, with serrated border and moderately strong hooked spines. Caudal deeply bifurcate. Yellowish; a black spot on the dorsal, involving the base of the spine and of the first

three rays; a small, elongate, horizontal black spot at the base of each lobe of the caudal.

Total length 62 millim.

Three specimens.

Closely allied to *O. stenopeltis* Kner, which differs in the presence of an occipito-nuchal groove, the smaller eye, the presence of dorsal shields, and the absence of black spots on the fins.

12. *OXYDORAS TRACHYPARIA*, n. sp. (Plate XL. fig. 2.)

No teeth in the upper jaw. Depth of body equal to length of head, $3\frac{2}{3}$ times in total length. Snout rounded, rugose except in the internarial space on each side; posterior nostril close to the eye; diameter of eye nearly equal to length of snout, rather more than $\frac{1}{3}$ length of head, equal to interorbital width; præopercle, subopercle, and opercle bony, rugose; cranial bones granulate; fontanelle not produced as a groove posteriorly; barbels not fringed (or, rather, maxillary barbels with a single basal barb), their bases united by a fold of the lower jaw; maxillary barbel not reaching opercular cleft; mandibular barbels short. Gill-cleft extending to below posterior border of eye. Humeral process granulate, broader than and half as long as pectoral spine, obliquely truncated posteriorly. Pectoral spine as long as dorsal, as long as head, strongly serrated on the inner side, rather feebly on the outer. Dorsal I 6; spine rather strongly serrated on both sides, a little nearer the adipose fin than the end of the snout. Adipose fin half as long as anal. Anal 13. No shields between the dorsal fins or on the belly. Lateral shields 33-34, nearly half as deep as the body, with serrated border and rather feeble hooked spines. Caudal deeply bifurcate. Pale olive above, whitish on the sides and beneath; fins white.

Total length 93 millim.

Two specimens.

This species, which further demonstrates the untenability of the genus *Hemidoras* as distinct from *Oxydoras*, stands nearest to *H. nattereri* Stdr., which differs in the fringed maxillary barbels, the more forward position of the posterior dorsal, and the smaller lateral shields.

13. *OXYDORAS BACHI*, sp. n. (Plate XL. fig. 3.)

No teeth in the upper jaw. Depth of body equal to length of head, $3\frac{2}{3}$ times in total length. Snout obtusely pointed, covered with skin; posterior nostril slightly nearer the eye than the anterior nostril; diameter of eye $\frac{1}{2}$ length of snout, $\frac{1}{4}$ length of head, $\frac{2}{3}$ interorbital width; cheek and opercle covered with skin; skull striated above, granulate on the sides; fontanelle not produced as a groove posteriorly; barbels not fringed, their bases united by a fold of the lower jaw; maxillary barbels just reaching

opercular cleft; mandibular barbels short. Gill-cleft extending to below centre of eye. Humeral process striated, twice as broad and half as long as pectoral spine, obliquely truncated posteriorly. Pectoral spine longer than dorsal, a little longer than head, strongly serrated on both sides. Dorsal I 5; spine rather feebly serrated on both sides, a little shorter than the head, a little nearer the adipose fin than the end of the snout. Adipose fin not half as long as anal. Anal 11. No shields between the dorsal fins or on the belly. Lateral shields 30, $\frac{1}{3}$ depth of body, with serrated border and moderately strong hooked spines. Caudal deeply bifurcate, with rounded lobes. Pale olive above, white below; fins white.

Total length 90 millim.

A single specimen.

Closely allied to *O. brevis* Kner, which is distinguished by the longer dorsal spine, the narrower humeral process, the longer adipose dorsal, and the number (13-14) of anal rays.

14. *OXYDORAS ELONGATUS*, sp. n. (Plate XL. fig. 4.)

No teeth in the upper jaw. Depth of body 5 times in total length, length of head $3\frac{1}{2}$ times. Snout obtusely pointed, covered with skin; posterior nostril twice as distant from the anterior as from the eye; diameter of eye nearly twice in length of snout, $4\frac{1}{2}$ times in length of head, $1\frac{2}{5}$ in interorbital width; cheeks and opercles covered with skin; cranial bones granulate; fontanelle not produced as a groove posteriorly; barbels not branched, their bases united by the fold of the lower jaw; maxillary barbels extending to opercular cleft; mandibular barbels short. Gill-cleft extending to below posterior border of eye. Humeral process granulate and striated, twice as broad and half as long as pectoral spine, tapering to a point posteriorly. Pectoral spine as long as dorsal, nearly as long as head, extending to base of ventrals, strongly serrated on the inner side, more feebly on the outer. Dorsal I 6; spine feebly serrated in front, more strongly behind, equally distant from the end of the snout and the adipose fin. Adipose fin not half as long as base of anal. Anal 12. No shields between the dorsal fins or on the belly. Lateral shields 33, small, pluricuspid, with rather feeble hooked spines. Caudal deeply bifurcate. Olive above, white below; lateral shields and fins orange.

Total length 105 millim.

A single specimen.

Resembles most *O. humeralis* Kner, which has minute teeth in the upper jaw, and much larger lateral shields, their depth being about $\frac{2}{5}$ that of the body and their border bearing more numerous small spines.

15. *CALLICHTHYS ARMATUS* Gthr.

16. *PLECOSTOMUS EMARGINATUS* C. & V.

17. *CHLETOSTOMUS BACHI*, sp. n. (Plate XLI. fig. 1.)

About 16 teeth on each side in each jaw. Depth of body $4\frac{1}{2}$ times in total length, length of head 3 times. Head very slightly longer than broad, entirely rough with small spines; snout rounded; diameter of eye 6 times in length of head, 3 times in length of snout, $3\frac{1}{2}$ times in interorbital width; no postorbital groove; longest erectile præopercular spines as long as diameter of eye; barbel minute, hardly $\frac{1}{2}$ diameter of eye. Throat and belly covered with small rough shields. Dorsal I 7; first ray a little shorter than head. Pectoral spine as long as head, covered with small spines, reaching middle of ventral. Ventral I 5, $\frac{2}{3}$ length of head. Anal I 4. Caudal obliquely truncated, lower ray $1\frac{1}{2}$ as long as upper. Shields on body rough with small spinules, without keels, 26 in a longitudinal series. Pale olive, with rather indistinct, large, rounded, darker spots; caudal with dark cross-bars.

Total length 110 millim.

A single specimen.

Nearest allied to *Ch. ologospilus* Gthr., which differs in the forked caudal fin and the naked belly.

18. *HYPOPTOPOMA GUENTHERI* Blgr.19. *LORICARIA ROSTRATA* Spix.20. *LORICARIA FILAMENTOSA* Stdr.21. *LORICARIA ACIPENSERINA* Kner.22. *ACESTRA GLADIUS*, sp. n. (Plate XLI. fig. 2.)

Length of head $3\frac{1}{2}$ times in total length. Snout exceedingly long and narrow, sword-shaped, the præ-oral part as long as the rest of the head, the length of the rostrum 14 times its least width; no bristles on the head; eye small, its diameter $3\frac{1}{2}$ times in interorbital width; upper angle of gill-opening nearer origin of dorsal than tip of snout. Dorsal I 6; first ray $\frac{1}{2}$ length of head. Pectoral not reaching ventral. Anal I 5; first ray $\frac{2}{5}$ length of head. Caudal deeply emarginate, with the outer rays produced into very long filaments. Body moderately depressed; 7 scutes between occiput and dorsal, the second and third more than twice as broad as long; 3 series of ventral scutes, 6 on each side between pectoral and ventral. Tail strongly depressed. 32 scutes along each side, those on the body forming two obscure keels coalescing a little behind the vertical of the anal. Uniform olive-grey; fins white, pectorals and ventrals with grey bars, caudal with a black band along the upper lobe.

Total length 215 millim.

Two specimens.

Closely allied to *A. oxyrhyncha* Kner. Distinguished by the absence of bristles on the snout and the broader dorsal scutes.

23. *STEGOPHILUS NEMURUS* Gthr.

24. *VANDELLIA CIRRHOSA* C. & V.

See remarks in P. Z. S. 1897, pp. 901 and 902.

The following is a description of the four specimens in Dr. Bach's collection:—

Depth of body 7 to 10 times in total length, length of head 8 to 10 times. Head much depressed, nearly as long as broad; snout rounded, as long as the diameter of the eye, which is $3\frac{1}{2}$ times in length of head; interorbital space one half to two thirds diameter of eye; mouth inferior; posterior nostrils between the eyes; maxillary barbel nearly half length of head; opercle and præopercle each with a bundle of erectile spines. Body slightly compressed. Pectoral as long as head *minus* snout. Dorsal 9, in the posterior fourth of the body. Anal 8-9, originating below middle of dorsal. Caudal truncated. Caudal peduncle twice as long as deep. Uniform white.

Total length 62 millim.

CHARACINIDÆ.

25. *CURIMATUS DOBULA* Gthr.

26. *CURIMATUS ALBURNUS* M. & T.

27. *TETRAGONOPTERUS MULTIRADIATUS* Stdr.

28. *TETRAGONOPTERUS ORBICULARIS* C. & V.

29. *TETRAGONOPTERUS MACULATUS* L.

30. *CHIRODON ALBURNUS* Gthr.

31. *CHALCINUS NEMATURUS* Kner.

32. *GASTROPELECUS STELLATUS* Kner.

33. *GASTROPELECUS PECTOROSUS* Garm.

34. *ANACYRTUS KNERII* Stdr.

35. *ANACYRTUS LIMÆSQUAMIS* Cope.

36. *ANACYRTUS AFFINIS* Gthr.

37. *CYNODON PECTORALIS* Gthr.

38. *CYNODON VULPINUS* Spix.

39. *SERRASALMO PIRAYA* Cuv.

40. *MYLETES ALBISCOPIUS* Cope.

CLUPEIDÆ.

41. CETENGRAULIS JURUENSIS, sp. n. (Plate XLI. fig. 3.)

Depth of body 5 times in total length, length of head $3\frac{1}{2}$ times. Snout very strongly projecting, a little shorter than diameter of eye, which is $5\frac{1}{2}$ times in length of head and $1\frac{1}{3}$ in interorbital width; jaws toothless; maxillary extending to articulation of mandible; cleft of mouth nearly $\frac{1}{2}$ length of head. Gill-rakers long, finely denticulate, about 40 on lower part of anterior arch. Dorsal 13, originating at equal distance from end of the snout and base of caudal. Pectoral a little more than $\frac{1}{2}$ length of head, extending a little beyond base of ventral. Anal 23, originating below posterior rays of dorsal. Caudal peduncle twice as long as deep. Caudal deeply forked. Scales 38 in a longitudinal series, 10 in a transverse series. Olive above, silvery on the sides and below; snout blackish above; fins pale orange, caudal rays blackish at the end.

Total length 140 millim.

A single specimen.

This fish, the first freshwater representative of the genus *Cetengraulis*, is nearest to *C. edentulus* Cuv., which differs in the deeper body.

42. PRISTIGASTER CATANUS Cuv.

OSTEOGLOSSIDÆ.

43. ARAPAIMA GIGAS Cuv.

Dr. Bach has shown me the photograph of a large specimen taken by him.

GYMNOTIDÆ.

44. STERNARCHUS NATTERERI Sdr.

45. STERNARCHUS MACROLEPIS Sdr.

46. STERNARCHUS OXYRHYNCHUS M. & T.

47. STERNARCHUS TAMANDUA, sp. n. (Plate XLII.)

Snout produced into a long, nearly straight tube, the length of which equals 4 times its least depth; mouth very small, with several rows of minute teeth; eye extremely minute, a little nearer the opercular cleft than the end of the snout. Depth of body half length of head. A very strongly developed adipose fin runs along the whole length of the body, from which it is easily detached. Pectoral $\frac{1}{3}$ length of head. Vent under the chin. Anal 220, originating a little in advance of gill-opening, longest rays rather more than $\frac{1}{2}$ depth of body. Scales very small, larger on the upper half of the body than on the lower; lat. l. 85. The tail, in the unique specimen, has been injured during life, and bears a short, regenerated caudal fin. Uniform yellowish white.

Total length 400 millim.

This fish is very rare in the Jurua River, and but a single specimen could be procured by Dr. Bach.

It is a most remarkable form, differing very considerably from any of the species with which we are acquainted.

48. RHAMPHICHTHYS BLOCHII Kaup.

49. STEATOGENYS ELEGANS Stdr.

The presence of a filament of adipose tissue, similar to the dorsal fin of *Sternarchus*, in a groove along each side of the mental region, to which attention has been drawn by Steindachner in describing his *Rhamphichthys elegans*, warrants, in my opinion, the establishment of a new genus, for which I propose the name *Steatogenys*.

50. STERNOPYGUS VIRESCENS Val.

TETRODONTIDÆ.

51. TETRODON PSITTACUS Bl. Schn.

EXPLANATION OF THE PLATES.

PLATE XXXIX.

Platystoma juruense, p. 421, with upper and lower views of head and outline of præmaxillary and palatal teeth.

PLATE XL.

Fig. 1. *Oxydoras trimaculatus*, p. 422.

Fig. 2. *Oxydoras trachyparia*, p. 423.

Fig. 3. *Oxydoras bachi*, p. 423.

Fig. 4. *Oxydoras elongatus*, p. 424.

PLATE XLI.

Fig. 1. *Chætostomus bachi*, p. 425.

Fig. 2. *Acestra gladius*, p. 425.

Fig. 3. *Cetengraulis juruensis*, p. 427.

PLATE XLII.

Sternarchus tamandua, p. 427, with upper view of head.